

## APPENDIX A

### National Science Board, Staff, Committees, and Advisory Panels

#### NATIONAL SCIENCE BOARD

*Terms Expire May 10, 1966*

W. O. BAKER, Vice President-Research, Bell Telephone Laboratories, Inc.,  
Murray Hill, N.J.

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Dame, Notre Dame, Ind.

WILLIAM V. HOUSTON, Honorary Chancellor, William Marsh Rice Univer-  
sity, Houston, Tex.

ROBERT S. MORISON, Professor of Biology, Cornell University, Ithaca, N.Y.

JOSEPH C. MORRIS, Vice President, Tulane University, New Orleans, La.

E. R. PIORE, Vice President, and Group Executive, International Business  
Machines Corp., Armonk, N.Y.

WILLIAM W. RUBEY, Professor of Geology and Geophysics, Department of  
Geology and Institute of Geophysics, University of California, Los Angeles,  
Calif.

ERIC A. WALKER (Chairman of the Board), President, the Pennsylvania  
State University, University Park, Pa.

*Terms Expire May 10, 1968*

HARVEY BROOKS, Gordon McKay Professor of Applied Physics and Dean of  
Engineering and Applied Physics, Harvard University, Cambridge, Mass.

RUFUS E. CLEMENT, President, Atlanta University, Atlanta, Ga.

HENRY EYRING, Dean, Graduate School, University of Utah, Salt Lake  
City, Utah.

PHILIP HANDLER (Vice Chairman of the Board), James B. Duke Professor  
and Chairman, Department of Biochemistry, Duke University, Durham,  
N.C.

KATHARINE E. MCBRIDE, President, Bryn Mawr College, Bryn Mawr, Pa.

EDWARD J. MCSHANE, Professor of Mathematics, Department of Mathe-  
matics, University of Virginia, Charlottesville, Va.

EDWARD L. TATUM, Member, the Rockefeller Institute, New York, N.Y.

RALPH W. TYLER, Director, Center for Advanced Study in the Behavioral  
Sciences, Stanford, Calif.

*Terms Expire May 10, 1970*

- H. E. CARTER, Head, Department of Chemistry and Chemical Engineering,  
University of Illinois, Urbana, Ill.  
JULIAN R. GOLDSMITH, Associate Dean, Division of the Physical Sciences,  
University of Chicago, Chicago, Ill.  
WILLIAM W. HAGERTY, President, Drexel Institute of Technology, Phila-  
delphia, Pa.  
MINA S. REES, Dean of Graduate Studies, the City University of New York,  
New York, N.Y.  
JOHN I. SNYDER, JR., Chairman of the Board and President, U.S. Indus-  
tries, Inc., New York, N.Y.  
JULIUS A. STRATTON, President, Massachusetts Institute of Technology,  
Cambridge, Mass.  
F. P. THIEME, Vice President, University of Washington, Seattle, Wash.  
(One vacancy.)

*Member Ex Officio*

LELAND J. HAWORTH, Director, National Science Foundation, Washing-  
ton, D.C.

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VERNICE ANDERSON, Secretary, National Science Board, National Science  
Foundation, Washington, D.C.

NATIONAL SCIENCE FOUNDATION STAFF\*

<i>Director</i> .....	LELAND J. HAWORTH
<i>Executive Assistant</i> .....	FRANK C. SHEPPARD
<i>Deputy Director</i> .....	JOHN T. WILSON
<i>General Counsel</i> .....	WILLIAM J. HOFF

RESEARCH

<i>Associate Director</i> .....	RANDAL M. ROBERTSON
<i>Special Assistant</i> .....	ROBERT W. JOHNSTON
<i>Senior Staff Associate</i> .....	RAYMOND J. SEEGER

Division of Mathematical and Physical Sciences

<i>Division Director</i> .....	GEOFFREY KELLER
<i>Executive Assistant</i> .....	ANDREW W. SWAGO
<i>Section Head for Astronomy</i> .....	GERARD F. W. MULDER
<i>Program Director for:</i>	
<i>Optical Astronomy</i> .....	HAROLD H. LANE
<i>Radio Astronomy</i> .....	EVERETT H. HURLBURT

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\*As of November 1964.

*Section Head for Atmospheric Sciences*--- EARL G. DROESSLER

*Program Director for:*

*Aeronomy* ----- EDWARD P. TODD

*Meteorology* ----- FRED D. WHITE

*Solar Terrestrial Research*----- ROBERT FLEISCHER

*Weather Modification*----- (Vacant)

*Section Head for Chemistry*----- WALTER R. KIRNER

*Program Director for:*

*Inorganic and Analytical Chemistry*--- OREN WILLIAMS

*Organic Chemistry*----- ALEX KOTCH

*Physical Chemistry*----- ROBERT H. LINNELL

*Section Head for Earth Sciences*----- WILLIAM E. BENSON

*Program Director for:*

*Geochemistry* ----- ALVIN VAN VALKENBURG

*Geology* ----- RICHARD G. RAY

*Geophysics* ----- ROY E. HANSON

*Oceanography* ----- RICHARD G. BADER

*Section Head for Mathematical Sciences*--- MILTON E. ROSE

*Program Director for:*

*Computer Sciences*----- OTTIS W. RECHARD

*Mathematics* ----- MATTHEW P. GAFFNEY, JR.

*Probability and Statistics*----- RALPH M. KRAUSE

*Section Head for Physics*----- WAYNE R. GRUNER

*Program Director for:*

*Atomic and Molecular Physics*----- (Vacant)

*Elementary Particle Physics*----- J. HOWARD McMILLEN

*Nuclear Physics*----- WILLIAM S. RODNEY

*Solid State and Low Temperature*

*Physics* ----- HOWARD W. ETZEL

*Theoretical Physics*----- (Vacant)

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*Division Director*----- HARVE J. CARLSON

*Deputy Division Director*----- DAVID D. KECK

*Section Head for Cellular Biology*----- Vacant

*Program Director for:*

*Developmental Biology*----- PHILIP GRANT

*Genetic Biology*----- HERMAN W. LEWIS

<i>Section Head for Environmental and Systematic Biology</i> -----	WALTER H. HODGE
<i>Program Director for:</i>	
<i>Environmental Biology</i> -----	JOHN S. RANKIN, JR.
<i>Systematic Biology</i> -----	WALTER H. HODGE (Acting)
<i>Section Head for Molecular Biology</i> ----	Vacant
<i>Program Director for:</i>	
<i>Biochemistry</i> -----	WALTER L. KOLTUN
<i>Biophysics</i> -----	Vacant
<i>Section Head for Physiological Processes</i> ..	DAVID B. TYLER
<i>Program Director for:</i>	
<i>Metabolic Biology</i> -----	JOHN M. WARD
<i>Regulatory Biology</i> -----	DAVID B. TYLER (Acting)
<i>Program Director for:</i>	
<i>Psychobiology</i> -----	HENRY S. ODBERT
<i>Facilities and Special Programs</i> -----	JACK T. SPENCER

#### Division of Engineering

<i>Division Director</i> -----	JOHN M. IDE
<i>Program Director for:</i>	
<i>Engineering Chemistry</i> -----	LEWIS G. MAYFIELD
<i>Engineering Energetics</i> -----	ROYAL E. ROSTENBACH (Acting)
<i>Engineering Materials</i> -----	ISRAEL WARSHAW
<i>Engineering Mechanics</i> -----	MICHAEL P. GAUS
<i>Engineering Systems</i> -----	Vacant

#### Division of Social Sciences

<i>Division Director</i> -----	HENRY W. RIECKEN (Acting)
<i>Special Assistant</i> -----	BERTHA W. RUBINSTEIN
<i>Program Director for:</i>	
<i>Anthropology</i> -----	ALLAN H. SMITH
<i>Economics</i> -----	HOWARD H. HINES
<i>Sociology and Social Psychology</i> -----	ROBERT L. HALL
<i>Special Projects and Facilities</i> -----	MURRAY ABORN
<i>Special Consultant for History and Philosophy of Science</i> -----	ROGER C. BUCK

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<i>Division Director</i> -----	HOWARD E. PAGE
<i>Deputy Division Director</i> -----	DENZEL D. SMITH
<i>Section Head for Institutional Development</i> -----	DENZEL D. SMITH
<i>Program Director for Institutional Grants</i> -----	J. MERTON ENGLAND
<i>Science Development Evaluation Group Senior Staff Associate</i> -----	WESLEY J. DALS
<i>Staff Associates</i> -----	HOWARD BOROUGHS JOHN K. MAJOR WILLIAM G. ROSEN
<i>Section Head for Science Facilities</i> -----	JOSHUA M. LEISE
<i>Science Facilities Evaluation Group Senior Staff Associate</i> -----	LOYAL G. GOFF
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<i>Architect</i> -----	HAROLD HOROWITZ

## Office of Antarctic Programs

<i>Head</i> -----	THOMAS O. JONES
<i>Executive Officer</i> -----	GEORGE R. TONEY
<i>Chief Scientist</i> -----	ALBERT P. GRARY
<i>Program Director for:</i>	
<i>Atmospheric Physics</i> -----	RAYMOND R. HEER, Jr.
<i>Biology</i> -----	GEORGE A. LLANO
<i>Field Requirements and Coordination</i> -----	PHILIP M. SMITH (Acting)
<i>International Cooperation and Infor- mation</i> -----	HENRY S. FRANCIS, Jr. (Acting)

## MOHOLE PROJECT OFFICE

<i>Director</i> -----	GORDON G. LILL
<i>Executive Assistant</i> -----	MILLER F. SHURTLEFF
<i>Deputy Director and Head, Mohole Oper- ations Office</i> -----	C. DON WOODWARD

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*Associate Director*----- HENRY W. RIECKEN

### Division of Scientific Personnel and Education

*Division Director*----- (Vacant)

*Deputy Division Director*----- KEITH R. KELSON

*Section Head for Special Projects in Science Education*----- LYLE W. PHILLIPS (Acting)

*Program Director for:*

*Advanced Science Education*----- EMMET T. HOOPER, Jr.

*Specialized Science Education*----- LYLE W. PHILLIPS

*Secondary School Program*----- HOWARD J. HAUSMAN

*Section Head for Undergraduate Education in the Sciences*----- LELAND SHANOR

*Program Director for:*

*Undergraduate Research Participation* ----- LEWIS N. PINO

*Undergraduate Instructional Scientific Equipment*----- PAUL C. PARIS

*Section Head for Course Content Improvement* ----- CHARLES A. WHITMER

*Program Director for:*

*Life and Social Sciences*----- RICHARD E. PAULSON

*Mathematics and Physical Sciences*----- JOHN M. MAYS

*Engineering* ----- LAURENCE O. BINDER  
(Acting)

*Elementary School Science*----- FREDERICK B. DUTTON

*Section Head for Institutes*----- C. RUSSELL PHELPS

*Program Director for:*

*Summer Institutes*----- WILLIAM E. MORRELL

*Academic Year Institutes*----- REINHARD L. KORGEN

*College and Elementary Program*----- CHARLES M. VAUGHN

*Section Head for Fellowships*----- THOMAS D. FONTAINE

*Program Director for:*

*Graduate Fellowships*----- HARRY M. DOUKAS

*Summer and Cooperative Fellowships* ----- HALL TAYLOR

*Foreign and Extramural Fellowships*----- HOWARD D. KRAMER

*Graduate Traineeship Program*----- FRANCIS G. O'BRIEN (Acting)

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<i>Associate Director</i> .....	BOWEN C. DEES
<i>Senior Staff Associate</i> .....	ALLEN O. GAMBLE

### Office of Economic and Manpower Studies

<i>Head</i> .....	JACOB PERLMAN
<i>General Analysis Staff</i>	
<i>Study Director for:</i>	
<i>Government-University Relations</i> .....	OSCAR H. LEVINE
<i>National Scientific Activities</i> .....	ROBERT W. CAIN
<i>Economic Growth</i> .....	THEODORE SURANYI-UNGER, Jr.
<i>Concepts and Data Coordination</i> ---	KATHRYN S. ARNOW
<i>Foreign Studies</i> .....	LAWRENCE A. SEYMOUR
<i>Section Head for Manpower and Education Studies</i> .....	THOMAS J. MILLS
<i>Study Director for:</i>	
<i>Manpower Studies</i> .....	ROBERT W. CAIN
<i>National Register for Scientific and Technical Personnel</i> .....	MILTON LEVINE
<i>Science Organization and Management Studies</i> .....	ZOLA BRONSON
<i>Science Education Studies</i> .....	WILLIAM A. JARACZ
<i>Section Head for Research and Development Studies</i> .....	KENNETH SANOW
<i>Study Director for:</i>	
<i>Government Studies</i> .....	BENJAMIN L. OLSEN
<i>Industrial Economic Studies</i> .....	GEORGE C. NICHOLS
<i>College and Universities Studies</i> .....	JOSEPH H. SCHUSTER
<i>Non-Academic Research Institutions Studies</i> .....	RICHARD M. BERRY
<i>Intersectoral Studies and Trends</i> .....	KATHRYN S. ARNOW

### Office of Program Development and Analysis

<i>Head</i> .....	LOUIS LEVIN
<i>Special Assistant</i> .....	MILDRED C. ALLEN
<i>Staff Associate</i> .....	J. RICHARD MAYER

### Office of Science Resources Planning

<i>Head</i> .....	HENRY DAVID
<i>Senior Staff Associate</i> .....	ALBERT ABRAHAMSON
<i>Senior Staff Associate</i> .....	WILLIAM V. CONSOLAZIO
<i>Staff Associate</i> .....	M. FRANK HERSMAN

## SCIENCE INFORMATION AND INTERNATIONAL SCIENCE ACTIVITIES

### Office of Science Information Service

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<i>Deputy Head</i> -----	HENRY BIRNBAUM
<i>Section Head for Studies and Support</i> -----	WILLIAM S. BARKER
<i>Program Director for:</i>	
<i>Research and Studies</i> -----	HELEN L. BROWNSON
<i>Information Systems</i> -----	RICHARD SEE
<i>Publications Support</i> -----	ERNEST R. SOHNS
<i>Section Head for Science Information Coordination</i> -----	HENRY J. DUBESTER
<i>Program Director for:</i>	
<i>Federal Science Information</i> -----	DELMER J. TRESTER
<i>Domestic and Foreign Science</i> -----	ARTHUR J. SHANAHAN

### Office of International Science Activities

<i>Head</i> -----	ARTHUR ROE
<i>Deputy Head</i> -----	PHILIP HEMILY
<i>Section Head for International Programs</i> -----	HOWARD FONCANNON
<i>Program Director for:</i>	
<i>Science Assistance</i> -----	MAX HELLMANN
<i>U.S.-Japan Cooperative Science</i> -----	NORMAN NEUREITTER
<i>Head, International Organizations Staff</i> -----	RAY W. MAYHEW
<i>Head, Program Development and Analy- sis Staff</i> -----	ROBERT HULL
<i>NSF/Tokyo</i>	
<i>Head</i> -----	J. E. O'CONNELL (Acting)
<i>Staff Associate</i> -----	M. DALE ARVEY
<i>NSF/San Jose</i>	
<i>Head</i> -----	DUNCAN CLEMENT

### OFFICE OF CONGRESSIONAL AND PUBLIC AFFAIRS

<i>Head</i> -----	JAMES F. KING
<i>Congressional Liaison Officer</i> -----	JAMES F. KING
<i>Public Information Officer</i> -----	ROLAND D. PAINE, JR.

### COMPTROLLER

<i>Comptroller</i> -----	AARON C. ROSENTHAL
<i>Deputy Comptroller and Budget Officer</i> -----	LUTHER F. SCHOEN
<i>Finance Officer</i> -----	EDWARD B. GARVEY
<i>Head, Internal Audit Office</i> -----	WILFORD G. KENER



## ADMINISTRATION

<i>Administrative Manager</i> -----	FRANK C. SHEPPARD
<i>Head, Contracts Office</i> -----	ROBERT D. NEWTON
<i>Head, Grants Office</i> -----	WILLIAM E. FEE, JR.
<i>Head, Office Services</i> -----	HOWARD TIHLA
<i>Personnel Officer</i> -----	CALVIN C. JONES

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## ADVISORY COMMITTEES, COUNCILS, AND COMMISSIONS

### *Divisional Committee for Biological and Medical Sciences*

- Lawrence R. Blinks, Director, Hopkins Marine Station, Stanford University, Pacific Grove, Calif.
- Theodore H. Bullock, Department of Zoology, University of California, Los Angeles, Calif.
- Harry Eagle, Albert Einstein School of Medicine, Yeshiva University, New York, N.Y.
- James D. Ebert, Department of Embryology, Carnegie Institution of Washington, Baltimore, Md.
- E. A. Evans, Jr., Department of Biochemistry, University of Chicago, Chicago, Ill.
- Paul J. Kramer, Department of Botany, Duke University, Durham, N.C.
- William D. Lotspeich, Department of Physiology, School of Medicine and Dentistry, University of Rochester, Rochester, N.Y.
- Ernst Mayr, Museum of Comparative Zoology, Harvard University, Cambridge, Mass.
- Conrad G. Mueller, Jr., Department of Psychology, Columbia University, New York, N.Y.
- Marcus Rhoades, Department of Botany, Indiana University, Bloomington, Ind.

### *Divisional Committee for Institutional Programs*

- Fred Carrington Cole (Chairman), President, Washington and Lee University, Lexington, Va.
- Paul F. Chenea, Vice President, Purdue University, Lafayette, Ind.
- Bryce Low Crawford, Jr., Dean, Graduate School, University of Minnesota, Minneapolis, Minn.
- John Ray Dunning, Dean, School of Engineering and Applied Science, Columbia University, New York, N.Y.
- Robert Worth Hiatt, Vice President for Academic Affairs, University of Hawaii, Honolulu, Hawaii.
- Douglas M. Knight, President, Duke University, Durham, N.C.
- Frank William Putnam, Head, Department of Biochemistry, College of Medicine, University of Florida, Gainesville, Fla.

Clarence Scheps, Vice President-Comptroller, Tulane University of Louisiana, New Orleans, La.

Dael Wolfe, Executive Officer, American Association for the Advancement of Science, Washington, D.C.

*Divisional Committee for Mathematical, Physical and Engineering Sciences*

Walter M. Elsasser, Department of Geology, Princeton University, Princeton, N.J.

Wayland C. Griffith, Director of Research, Missiles and Space Division, Lockheed Aircraft Corp., Palo Alto, Calif.

Harry H. Hess, Department of Geology, Princeton University, Princeton, N.J.

Glenn Murphy, Head, Department of Nuclear Engineering, Iowa State University, Ames, Iowa.

John D. Roberts (Chairman), Crellin Laboratory, California Institute of Technology, Pasadena, Calif.

Albert E. Whitford, Director, Lick Observatory, University of California, Mount Hamilton, Calif.

Raymond L. Wilder, Department of Mathematics, University of Michigan, Ann Arbor, Mich.

Robert R. Wilson, Director, Laboratory of Nuclear Studies, Cornell University, Ithaca, N.Y.

John R. Winckler, Department of Physics, University of Minnesota, Minneapolis, Minn.

*Divisional Committee for Scientific Personnel and Education*

Anne Anastasi, Department of Psychology, Fordham University, New York, N.Y.

Donald B. Anderson, Vice President, Consolidated University of North Carolina, Chapel Hill, N.C.

Gordon S. Brown, Dean, School of Engineering, Massachusetts Institute of Technology, Cambridge, Mass.

Bryce L. Crawford, Jr., Dean, Graduate School, University of Minnesota, Minneapolis, Minn.

Edward Creutz, Vice President, Research and Development, General Atomic, San Diego, Calif.

Mark H. Ingraham (Chairman), University of Wisconsin, Madison, Wis.

Francis Keppel, Commissioner, U.S. Office of Education, Washington, D.C.

Norman H. Nachtrieb, Department of Chemistry, University of Chicago, Chicago, Ill.

Harold W. Stoke, President, Queens College, Flushing, N.Y.

W. Gordon Whaley, Dean, Graduate School, University of Texas, Austin, Tex.

### *Divisional Committee for Social Sciences*

- Leonard S. Cottrell, Social Psychologist and Secretary, Russell Sage Foundation, New York, N.Y.
- Pendleton Herring (Chairman), President, Social Science Research Council, New York, N.Y.
- Horace M. Miner, Department of Anthropology and Sociology, University of Michigan, Ann Arbor, Mich.
- Frederick Mosteller, Department of Mathematical Statistics, Harvard University, Cambridge, Mass.
- Joseph J. Spengler, Department of Economics and Business Administration, Duke University, Durham, N.C.
- James Tobin, Department of Economics, Yale University, New Haven, Conn.
- Dael Wolfe, Executive Officer, American Association for the Advancement of Science, Washington, D.C.

### *Advisory Committee for Economic and Manpower Studies*

- Gerhard Colm, Chief Economist, National Planning Association, Washington, D.C.
- Richard A. Harvill, President, University of Arizona, Tucson, Ariz.
- Everett M. Kassalow, Director of Research, Industrial Unions Department, AFL-CIO, Washington, D.C.
- John W. Kendrick, Professor of Economics, The George Washington University, Washington, D.C.
- Wayne E. Kuhn, General Manager, Research and Technical Department, Texaco, Inc., Beacon, N.Y.
- Charles E. Mack, Jr., Director of Research, Grumman Aircraft Engineering Corp., Bethpage, Long Island, N.Y.
- John W. McConnell, President, University of New Hampshire, Durham, N.H.
- Albert Rubenstein, Professor of Industrial Engineering, Northwestern University, Evanston, Ill.
- Gardiner L. Tucker, Director of Research, International Business Machines Corp., Yorktown Heights, N.Y.
- Ralph J. Watkins (Chairman), Vice President, Surveys and Research Corp., Washington, D.C.

### *Advisory Committee on International Science Activities*

- Ray Boundy, Board of Directors, Dow Chemical Co., Midland, Mich.
- J. Douglas Brown, Dean of Faculty, Princeton University Princeton, N.J.
- Charles Dollard, North Bennington, Vt.
- Carroll A. Hochwalt, Vice President, Monsanto Chemical Co., St. Louis, Mo.
- Harry C. Kelly, Dean of Faculty, North Carolina State College, Raleigh, N.C.
- Joseph B. Koepfli, Gates and Crellin Laboratories of Chemistry, California Institute of Technology Pasadena, Calif.

Harold W. Stoke, President, Queens College, Flushing, N.Y.

Merle A. Tuve, Director, Department of Terrestrial Magnetism, Carnegie Institution of Washington, Washington, D.C.

Carroll L. Wilson, School of Industrial Management, Massachusetts Institute of Technology, Cambridge, Mass.

*Advisory Council for Manpower and Education Studies Programs*

E. C. Elting, Deputy Administrator, Agricultural Research Service, Department of Agriculture, Washington, D.C.

Ralph C. M. Flynt, Associate Commissioner for Educational Research and Development, U.S. Office of Education, Washington, D.C.

Joel D. Griffing, Chief Planning Officer, Selective Service System, Washington, D.C.

Albert Kay, Director of Manpower Resources, Office of Assistant Secretary of Defense (Manpower), The Pentagon, Washington, D.C.

Robert Lacklen, Director of Personnel, National Aeronautics and Space Administration, Washington, D.C.

Thomas J. Mills (Chairman), Head, Manpower and Education Studies Section, National Science Foundation, Washington, D.C.

Joseph Murtaugh, Chief, Office of Program Planning, National Institutes of Health, Department of Health, Education, and Welfare, Bethesda, Md.

Richard A. Prindle, Chief, Division of Public Health Methods, Public Health Service, Washington, D.C.

Oscar Smith, Director, Office of Industrial Relations, Atomic Energy Commission, Washington, D.C.

O. Glenn Stahl, Director, Bureau of Programs and Standards, Civil Service Commission, Washington, D.C.

Conrad Taeuber, Assistant Director, Demographic Fields, Bureau of the Census, Department of Commerce, Washington, D.C.

Seymour Wolfbein, Deputy Assistant Secretary for Manpower and Statistics, Department of Labor, Washington, D.C.

*Science Information Council*

\* Burton W. Adkinson, Head, Office of Science Information Service, National Science Foundation, Washington, D.C.

Curtis G. Benjamin, Chairman of the Board, McGraw-Hill, Inc., New York, N.Y.

Julian H. Bigelow, School of Mathematics, The Institute for Advanced Study, Princeton, N.J.

\* Martin M. Cummings, Director, National Library of Medicine, Public Health Service, Department of Health, Education, and Welfare, Bethesda, Md.

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\* Ex officio members

Gaylord P. Harnwell, President, University of Pennsylvania, Philadelphia, Pa.

Richard L. Kenyon (Chairman), Director of Publications, ACS Applied Journals, American Chemical Society, Washington, D.C.

Henry C. Longnecker, Manager, Science Information Department, Research and Development Division, Smith, Kline & French Laboratories, Philadelphia, Pa.

Thomas F. Malone, Director of Research, The Travelers Insurance Co., Hartford, Conn.

Herbert Manzel, Research Associate, Bureau of Applied Social Research, Columbia University, New York, N.Y.

\* Foster E. Mohrhardt, Director, National Agricultural Library, U.S. Department of Agriculture, Washington, D.C.

Harry R. Most, President, W. B. Saunders Co., Philadelphia, Pa.

\* L. Quincy Mumford, The Librarian of Congress, Washington, D.C.

J. R. Porter, Chairman, Department of Microbiology, College of Medicine, State University of Iowa, Iowa City, Iowa.

Derek J. de Solla Price, Avon Professor of History of Science, Yale University, New Haven, Conn.

Ralph R. Shaw, Professor, Graduate School of Library Services, Rutgers University, New Brunswick, N.J.

R. H. Shryock, Professor of History of Science, Yale University, New Haven, Conn.

Don R. Swanson, Dean of the Graduate Library School, Harper Memorial Library, University of Chicago, Chicago, Ill.

John W. Tukey, Department of Mathematics, Princeton University, Princeton, N.J.

Raymond K. Wakerling, Director, Technical Information Division, Lawrence Radiation Laboratory, University of California, Berkeley, Calif.

#### *Commission on Weather Modification*

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William C. Colman, Executive Director, Advisory Commission on Intergovernmental Relations, Washington, D.C.

John C. Dreier, Visiting Professor of Latin American Affairs, School of Advanced International Studies, Johns Hopkins University, Washington, D.C.

Leonid Hurwicz, Department of Economics, University of Minnesota, Minneapolis, Minn.

Thomas F. Malone, Director of Research, Travelers Insurance Company, Hartford, Conn.

John Bardeen, Department of Physics, University of Illinois, Urbana, Ill.

Arthur W. Murphy, Columbia University Law School, New York, N.Y.

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\* Ex officio members.

- Sumner T. Pike, Vice President, Trident Packing Company, Inc., Lubec, Maine.
- William S. von Arx, Woods Hole Oceanographic Institution, Woods Hole, Mass.
- Gilbert F. White, Department of Geography, University of Chicago, Chicago, Ill.
- Karl M. Wilbur, Department of Zoology, Duke University, Durham, N.C.

#### ADVISORY PANELS

##### *Advisory Panel for Anthropology*

- Joseph B. Casagrande, Department of Anthropology, University of Illinois, Urbana, Ill.
- Robert W. Ehrich, Department of Sociology and Anthropology, Brooklyn College, Brooklyn, N.Y.
- Frederick Johnson, R. S. Peabody Foundation for Archaeology, Phillips Academy, Andover, Mass.
- Douglas L. Oliver, Department of Anthropology, Harvard University, Cambridge, Mass.
- Herbert H. Paper, Department of Linguistics, University of Michigan, Ann Arbor, Mich.
- Raymond H. Thompson, Department of Anthropology, University of Arizona, Tucson, Ariz.

##### *Advisory Panel for Astronomy*

- Russell Grant Athay, University of Utah, Salt Lake City, Utah.
- Geoffrey R. Burbidge, University of California, La Jolla, Calif.
- Ronald N. Bracewell (Chairman), Radioscience Laboratory, Stanford University, Stanford, Calif.
- Frederick T. Haddock, Jr., The Observatory, University of Michigan, Ann Arbor, Mich.
- Edward F. McClain, U.S. Naval Research Laboratory, Washington, D.C.

- Bengt G. Strömgren, Institute for Advanced Study, Princeton University, Princeton, N.J.
- Merle F. Walker, Lick Observatory, University of California, Mount Hamilton, Calif.

##### *Advisory Panel for Atmospheric Sciences*

- Werner A. Baum, Vice President for Academic Affairs, University of Miami, Coral Gables, Fla.
- George S. Benton, Department of Civil Engineering, Johns Hopkins University, Baltimore, Md.
- Herbert Friedman, Atmosphere and Astrophysics Division, Naval Research Laboratory, Washington, D.C.
- Richard M. Goody (Chairman), Department of Engineering and Applied Physics, Harvard University, Cambridge, Mass.
- Francis S. Johnson, Graduate Research Center, Dallas, Tex.
- Cecil E. Leith, Jr., Lawrence Radiation Laboratory, University of California, Livermore, Calif.

##### *Advisory Panel for Chemistry*

- Robert E. Connick (Chairman), College of Chemistry, University of California, Berkeley, Calif.
- William Eberhardt, School of Chemistry, Georgia Institute of Technology, Atlanta, Ga.

H. S. Gutowsky, Department of Chemistry, University of Illinois, Urbana, Ill.

George Hammond, Department of Chemistry, California Institute of Technology, Pasadena, Calif.

Harold Hart, Department of Chemistry, Michigan State University, East Lansing, Mich.

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- J. Hoover Mackin, Department of Geology, University of Texas, Austin, Tex.
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- Stephen L. McDonald, Department of Economics, University of Texas, Austin, Tex.
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- Gerald A. Leonards, Department of Civil Engineering, Purdue University, Lafayette, Ind.
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- John L. Moll, Electrical Engineering Department, Stanford University, Stanford, Calif.
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- John R. Ragazzini, College of Engineering, New York University, New York, N.Y.
- Samuel Seely, Department of Electrical Engineering, Case Institute of Technology, Cleveland, Ohio.



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- Advisory Panel for the International Years of the Quiet Sun*
- Kinsey Anderson, Space Sciences Laboratory, University of California, Berkeley, Calif.
- R. Grant Athay, Chairman, Department of Physics, University of Utah, Salt Lake City, Utah.
- Joseph W. Chamberlain, Space Division, Kitt Peak National Observatory, Tucson, Ariz.
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- Robert MacVicar, Dean, Graduate School, Vice President, Academic Affairs, Oklahoma State University, Stillwater, Okla.
- John W. Oswald, President, University of Kentucky, Lexington, Ky.
- Howard M. Phillips, Sr., President, Birmingham-Southern College, Birmingham, Ala.
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